careers in LOGISTICS

Aircraft Mechanics and Service Technicians

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Job Overview

Aircraft Mechanics and Service Technicians are responsible for ensuring that aircraft run safely and efficiently. They diagnose problems and adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. This occupation includes three specialties: Airframe and Powerplant Mechanics, Aircraft Engine Specialists, and Aircraft Body and Bonded Structure Repairers.

Airframe and Powerplant (A&P) Mechanics inspect, test, repair, maintain, and service aircraft. The airframe includes the wings, fuselage, brakes, tail assembly, and the oil and fuel tanks. The power plant is the engine and propellers (if used) of the aircraft.

Aircraft Engine Specialists repair and maintain aircraft engines. This specialty includes Helicopter Mechanics.

Aircraft Body and Bonded Structure Repairers repair the body or structure of aircraft according to manufacturer's specifications.

Aircraft Mechanics and Service Technicians work on a variety of aircraft, from jets to propeller-driven aircraft to helicopters. They perform routine maintenance and inspections, according to Federal Aviation Administration (FAA) regulations. They may check aircraft after a specific number of hours, days, cycles of operation, or a combination of these schedules.

Typical Tasks

- Read and interpret maintenance manuals, service bulletins, and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components.
- Inspect completed work to certify that maintenance meets standards and that aircraft are ready for operation.
- Maintain repair logs, documenting all preventive and corrective aircraft maintenance.
- Conduct routine and special inspections as required by regulations.

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- Examine and inspect aircraft components, including landing gear, hydraulic systems, and de-icers to locate cracks, breaks, leaks, or other problem.
- Inspect airframes for wear or other defects.
- Maintain, repair, and rebuild aircraft structures, functional components, and parts such as wings and fuselage, rigging, hydraulic units, oxygen systems, fuel systems, electrical systems, gaskets, and seals.
- Measure the tension of control cables.

*Detailed descriptions of these occupations may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.*

Important Skills, Knowledge, and Abilities

- Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.
- Repairing — Repairing machines or systems using the needed tools.
- Troubleshooting — Determining causes of operating errors and deciding what to do about it.
- Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Equipment Selection — Determining the kind of tools and equipment needed to do a job.
- Writing — Communicating effectively in writing as appropriate for the needs of the audience.
- Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Work Environment

Aircraft Mechanics and Service Technicians usually work in hangars or in other indoor areas that are clean spaces with good lighting and ventilation. Some work on "flight lines" where aircraft park on the airfield to receive emergency repairs. Those who work outdoors are exposed to extreme weather conditions. They may be required to lift parts weighing up to 70 lbs. They often stand, lie, or kneel in awkward positions and may work on scaffolds or ladders. When testing engines, Mechanics require ear protection to minimize noise from the engine and power tools. Aircraft Mechanics have a highly demanding job. They regularly work under time constraints to meet flight schedules while maintaining safety standards. The responsibility of getting thousands of passengers and crew safely to their destinations, and the potential tragedy of mechanical error, can be incredibly stressful.

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Aircraft Mechanics and Service Technicians usually work a standard 40-hour week. Since airports operate continuously, Technicians work in 8-hour shifts around the clock and frequently work overtime.

Aircraft Mechanics and Service Technicians who work for commercial airlines and aerospace firms may belong to the International Association of Machinists and Aerospace Workers, the Transport Workers Union of America, or the International Brotherhood of Teamsters.

California's Job Outlook and Wages

The California Outlook and Wage table below represents the occupation across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
Aircraft Mechanics and Service Technicians				
49-3011	11,600	13,300	450	$21.38 to $32.03

Wages do not reflect self-employment.
***Average annual openings** include new jobs plus net replacements.*
Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Trends

Employment of Aircraft Mechanics and Service Technicians is expected to grow at an average rate compared with all occupations from 2004 to 2014. Employment opportunities should be excellent for those who have completed aircraft mechanic training programs. In addition, numerous job openings will result over the next decade when many experienced Mechanics and Technicians retire or leave for other jobs.

Despite a recent slowdown in the airline industry, trends indicate that air travel will increase over the next decade as the economy expands and population grows. As air passenger traffic increases, more Mechanics and Technicians will be needed. If the number of students entering trade schools continues to decline, a shortage of qualified Mechanics could result.

Training/Requirements/Apprenticeships

Most airlines and general aviation firms require an A&P certificate from the FAA. Aircraft Mechanics who are not certified must work under the supervision of a certified Mechanic who can sign approval of the work before the aircraft or its equipment is considered airworthy.

Applicants for various certificates must meet knowledge, skill, and experience requirements for repairing, servicing, and inspecting specific parts of the aircraft. Aircraft Mechanics usually learn the work by attending an FAA-certified mechanic school for 14 to 24 months. A Mechanic with an airframe, power plant, or A&P rating can work only on the specific parts of the aircraft for which he or she is certified.

To be eligible for FAA certificate examinations, candidates must be at least 18 years old and be able to read, write, and understand English. They must have 18 months experience in either airframe or power plant work, or a combination of 30 months in both. Related military service

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may be used to meet certification requirements. A list of aviation maintenance technician schools that offer certificate programs and other useful references can be found on the FAA Web site at www.faa.gov under the "Mechanics" section. The exam process includes three types of tests: a written exam, an oral test, and a practical test.

Recommended High School Course Work

High school students interested in this kind of work should take mathematics, physics, chemistry, electronics, computer science, mechanical drawing, machine shop, auto shop, and English courses.

Where Do I Find the Job?

Since major airlines offer good pay and benefits, Aircraft Mechanics will encounter competition in landing these jobs. Small commuter and regional airlines, FAA repair stations, and general aviation offer the best job opportunities.

Many Aircraft Mechanics and Service Technicians work for the federal government as nonmilitary workers at large military bases. Candidates can search job openings and apply on-line through the U.S. Office of Personnel Management Web site at www.usajobs.opm.gov.

Use the *Search for Employers by Industry* feature on the *Career Center* page at www.labormarketinfo.edd.ca.gov to locate employers in your area. Search under the following industry names to get a list of private firms and their addresses:

- Aircraft Engine and Engine Parts
- Aircraft Manufacturing
- All Other Motor Vehicle Dealers
- Flight Training
- Guided Missiles and Space Vehicles
- Other Aircraft Parts and Equipment
- Other Guided Missile/Space Vehicle Parts
- Other Nonscheduled Air Transportation

Search these **yellow page** headings for listings of private firms:

- Air Cargo & Package Express Service
- Aircraft Dealers
- Aircraft Flight Training Schools
- Aircraft Parts & Supplies
- Aircraft Servicing & Maintenance
- Aircraft-Charter, Rental & Leasing
- Airlines
- Airports & Airport Operation

Where Can the Job Lead?

As Aircraft Mechanics and Service Technicians gain experience, they can advance to Lead Mechanics, Crew Chiefs, Inspectors, or Shop Supervisors. In the airlines, where promotion is often determined by examination, supervisors may advance to executive positions. Some transfer to larger airlines.

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Related Occupations

Automobile Mechanics (see *Occupational Guide No. 24*)

Bus and Truck Mechanics and Diesel Engine Specialists (see Logistics Profile)

Industrial Machinery Mechanics (see *Occupational Guide No. 136*)

Welders, Cutters, Solderers, and Brazers (see *Manufacturing Careers*)

Other Sources

Aeronautical Repair Station Association (ARSA)
www.arsa.org

Aircraft Electronics Association
www.aea.net

Aircraft Mechanics Fraternal Association (AMFA)
www.amfanatl.org

California Association of Regional Occupational Centers and Programs
www.carocp.org

Federal Aviation Administration (FAA)
www.faa.gov

International Association of Machinists and Aerospace Workers
www.iamaw.org

International Brotherhood of Teamsters Airline Division
www.teamster.org/divisions/airline/airline.asp

Professional Aviation Maintenance Association (PAMA)
www.pama.org

Transport Workers Union of America
www.twu.org